Wp .

n-epi

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**CAPACITANCE** Inventor (s): Pete L. Pegler USSN: 10/677,570 Attorney Docket #: LOVO-041.DIV 1/7 E. ACEMAE OXIDE 120 <del>†</del>а. **№** 150 METAL n\*\* SUBSTRATE DRAIN 160 SOURCE REGIONS <u>8</u> **Wg** 140 Wg 40 ⁺⊏

FIGURE 1 (PRIOR ART)

TITLE: STRUCTURE AND METHOD FOR A JUNCTION FIELD EFFECT TRANSISTOR WITH REDUCED GATE CAPACITANCE

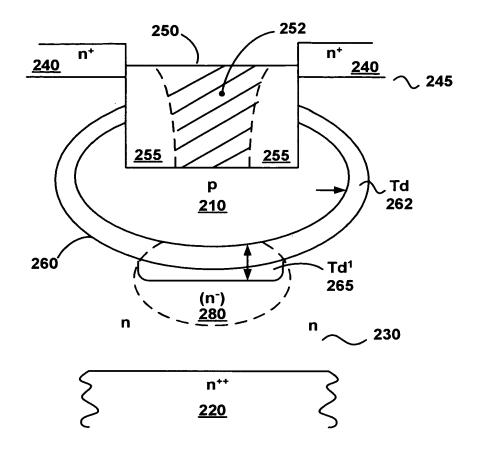
Inventor (s): Pete L. Pegler

USSN: 10/677,570

Attorney Docket #: LOVO-041.DIV

2/7

<u>200</u>



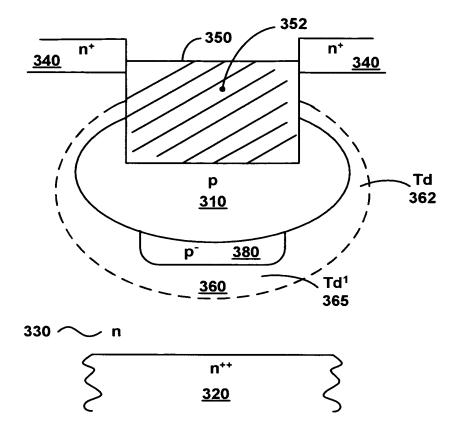
Inventor (s): Pete L. Pegler

USSN: 10/677,570

Attorney Docket #: LOVO-041.DIV

3/7

<u>300</u>



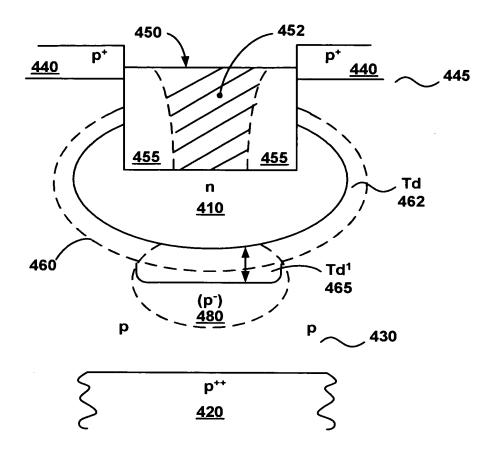
Inventor (s): Pete L. Pegler

USSN: 10/677,570

Attorney Docket #: LOVO-041.DIV

4/7

<u>400</u>



TITLE: STRUCTURE AND METHOD FOR A JUNCTION FIELD EFFECT TRANSISTOR WITH REDUCED GATE CAPACITANCE

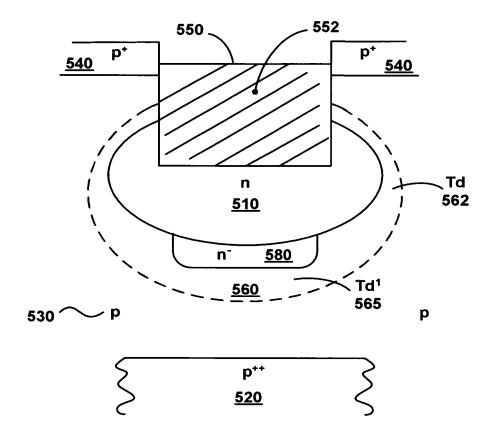
Inventor (s): Pete L. Pegler

USSN: 10/677,570

Attorney Docket #: LOVO-041.DIV

5/7

<u>500</u>



TITLE: STRUCTURE AND METHOD FOR A JUNCTION FIELD EFFECT TRANSISTOR WITH REDUCED GATE CAPACITANCE Inventor (s): Pete L. Pegler USSN: 10/677,570 Attorney Docket #: LOVO-041.DIV 6/7 600 **START** FORMING AN n-TYPE EPITAXIAL LAYER ON AN n++ **SUBSTRATE** <u>610</u> FORMING AN n+ SOURCE REGION DISPOSED ON TOP OF A SURFACE OF THE n-TYPE EPITAXIAL LAYER 620 FORMING A PLURALITY OF WELL REGIONS IN THE n-TYPE EPITAXIAL LAYER SURROUNDING THE n+ **SOURCE REGION** <u>630</u> FORMING A PLURALITY OF p-TYPE GATE REGIONS SURROUNDING BOTTOMS OF THE PLURALITY OF WELL REGIONS IN THE n-TYPE EPITAXIAL LAYER 640 FORMING AN ALTERED n-TYPE EPITAXIAL REGION BELOW THE PLURALITY OF WELL REGIONS FOR EXTENDING DEPLETION REGIONS SURROUNDING THE PLURALITY OF p-TYPE GATE REGIONS INTO THE n-TYPE EPITAXIAL LAYER WITHOUT COMPROMISING AN ACTIVE REGION OF THE JEET 650

## FIGURE 6

**END** 

TITLE: STRUCTURE AND METHOD FOR A JUNCTION FIELD EFFECT TRANSISTOR WITH REDUCED GATE **CAPACITANCE** Inventor (s): Pete L. Pegler USSN: 10/677,570 Attorney Docket #: LOVO-041.DIV 7/7 700 START FORMING A p-TYPE EPITAXIAL LAYER ON AN p++ **SUBSTRATE** 710 FORMING AN p+ SOURCE REGION DISPOSED ON TOP OF A SURFACE OF THE p-TYPE EPITAXIAL LAYER 720 FORMING A PLURALITY OF WELL REGIONS IN THE p-TYPE EPITAXIAL LAYER SURROUNDING THE p+ **SOURCE REGION 730** FORMING A PLURALITY OF n-TYPE GATE REGIONS SURROUNDING BOTTOMS OF THE PLURALITY OF WELL REGIONS IN THE p-TYPE EPITAXIAL LAYER 740 FORMING AN ALTERED p-TYPE EPITAXIAL REGION BELOW THE PLURALITY OF WELL REGIONS FOR EXTENDING DEPLETION REGIONS SURROUNDING THE PLURALITY OF n-TYPE GATE REGIONS INTO THE p-TYPE EPITAXIAL LAYER WITHOUT COMPROMISING AN ACTIVE REGION OF THE JFET **750** 

## FIGURE 7

**END**